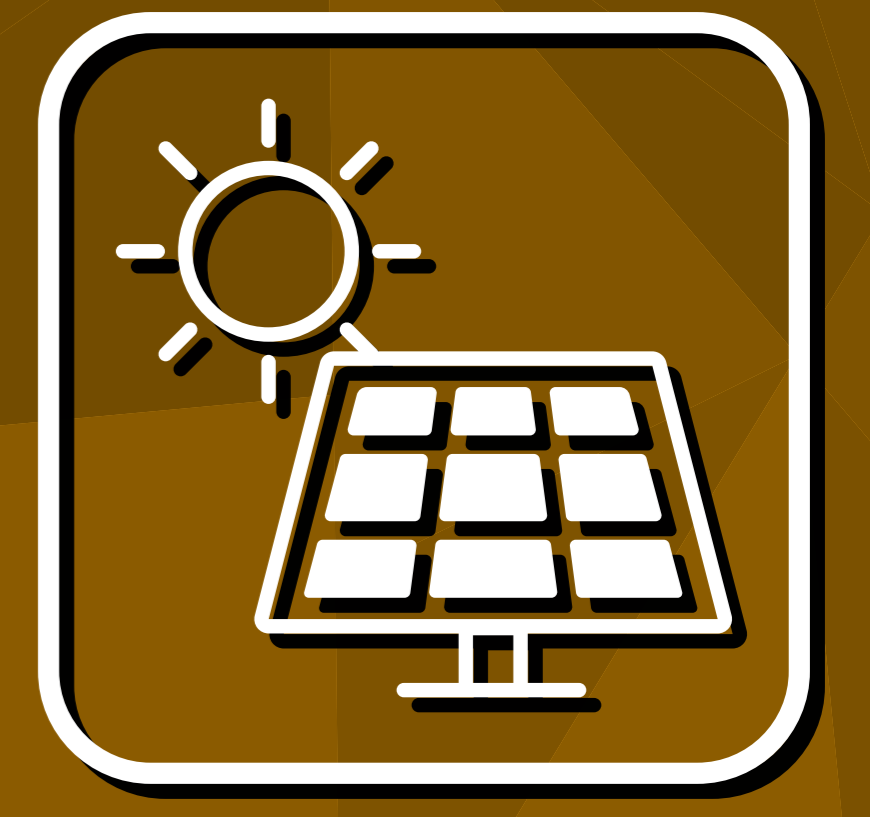


Photovoltaic power generation



Green innovation fund Project/Development of next-generation solar cells

NEDO aims to introduce solar power generation systems in places where they cannot be installed by existing technologies, by early practical application of perovskite solar cells toward the realization of carbon neutrality by 2050.

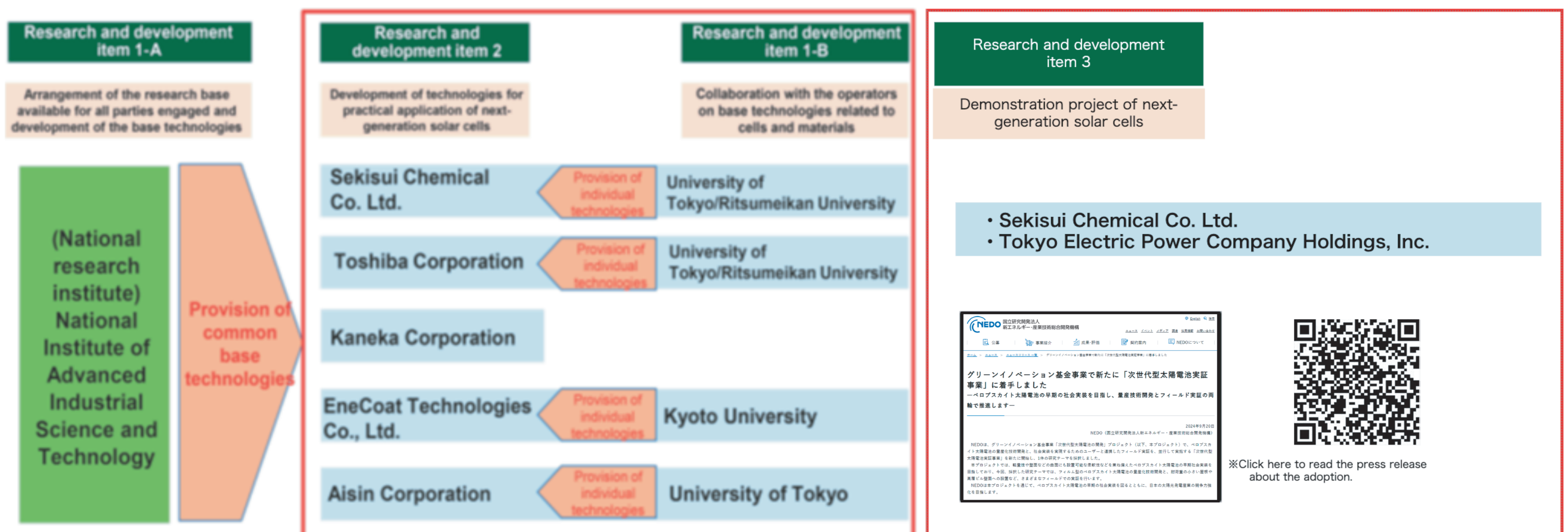
In Japan, in which there is little flat land, one way to secure suitable sites for solar power generation is to install it in places where it could not be installed by existing technology (factory rooftops, building walls, etc.). To achieve this, it is essential to develop next-generation solar cells, which have various other features such as light weight sufficient flexibility for installation on curved surfaces like walls and are comparable to conventional silicon solar cells in terms of performance.

In this project, NEDO aims to achieve a power generation cost of 14 yen/kWh or less by 2030 through the following research and development activities (1) to (3), in order to develop base technologies for next-generation solar cells (perovskite) and establish individual element technologies for each manufacturing process to achieve product-level scale-up.

Research and development item

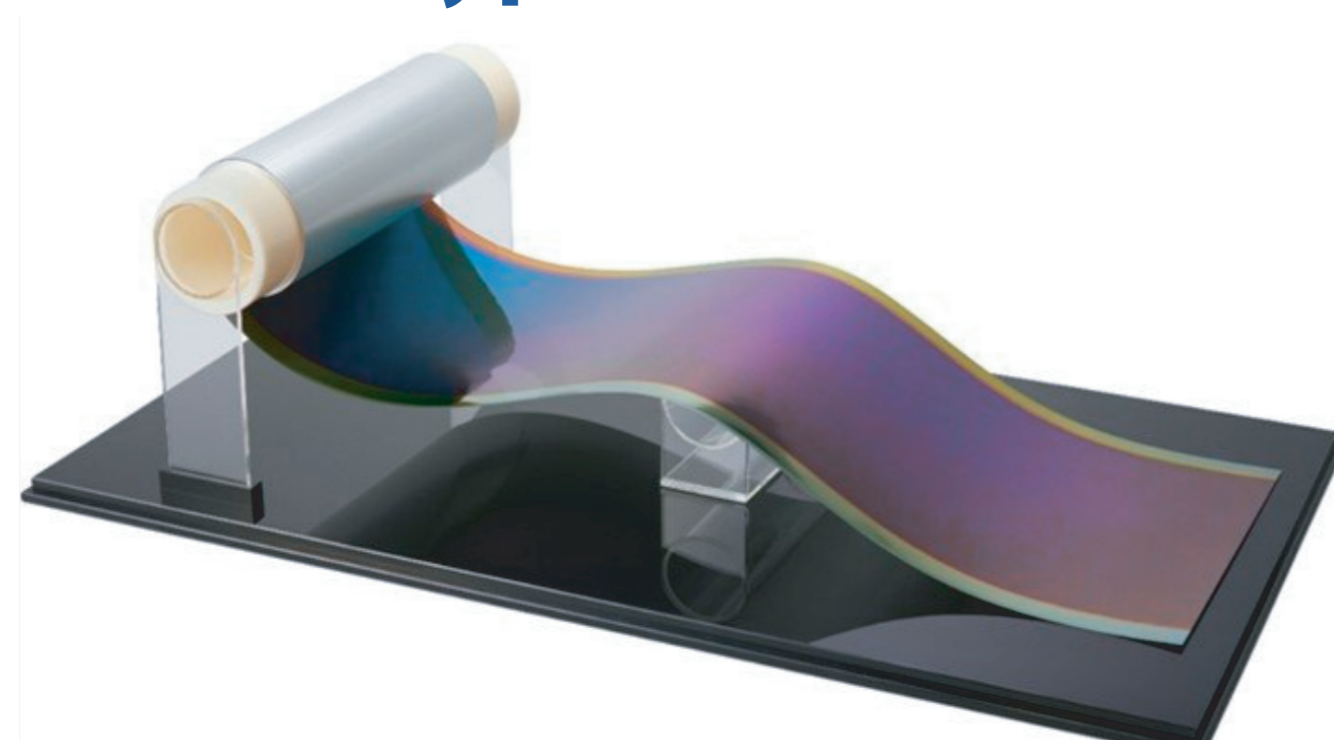
<p>(1) Development of next-generation solar cell base technologies (budget amount: 11 billion yen)</p> <p>Period: FY2021-2025</p>	<ul style="list-style-type: none"> Development, analysis, and evaluation of common base technologies for perovskite solar cells. Development of technologies which contribute to improvements in durability and efficiency and cost reduction. Collaborate with the company side of development (2).
<p>(2) Practical application project of next-generation solar cells (budget: 16 billion yen)</p> <p>Period: FY2021-2025</p>	<ul style="list-style-type: none"> Establishment of a technology to fabricate practical-size modules (900 cm² or larger) of perovskite solar cells. Development of element technologies to achieve a power generation cost of 20 yen/kWh or less under certain conditions. Establishment of element technologies for each manufacturing process to achieve scale-up.
<p>(3) Demonstration project of next-generation solar cells (budget: 37.8 billion yen)</p> <p>Period: FY2021-2025</p>	<ul style="list-style-type: none"> Aim to achieve a power generation cost of 14 yen/kWh or less through field demonstration of the production process established in Research and development (2). Develop technologies to achieve high throughput and high yield. Verify the performance including installation and construction methods which take advantage of lightweight and flexibility.

Implementation organization

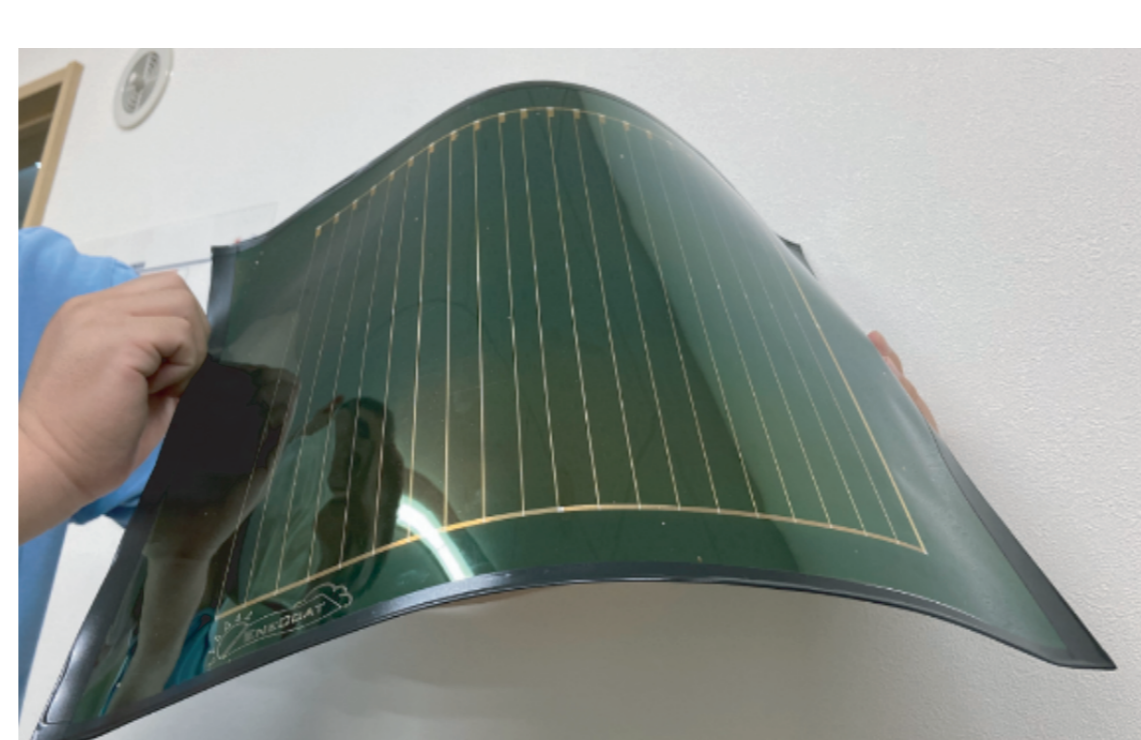


Examples of modules under development

Film-type

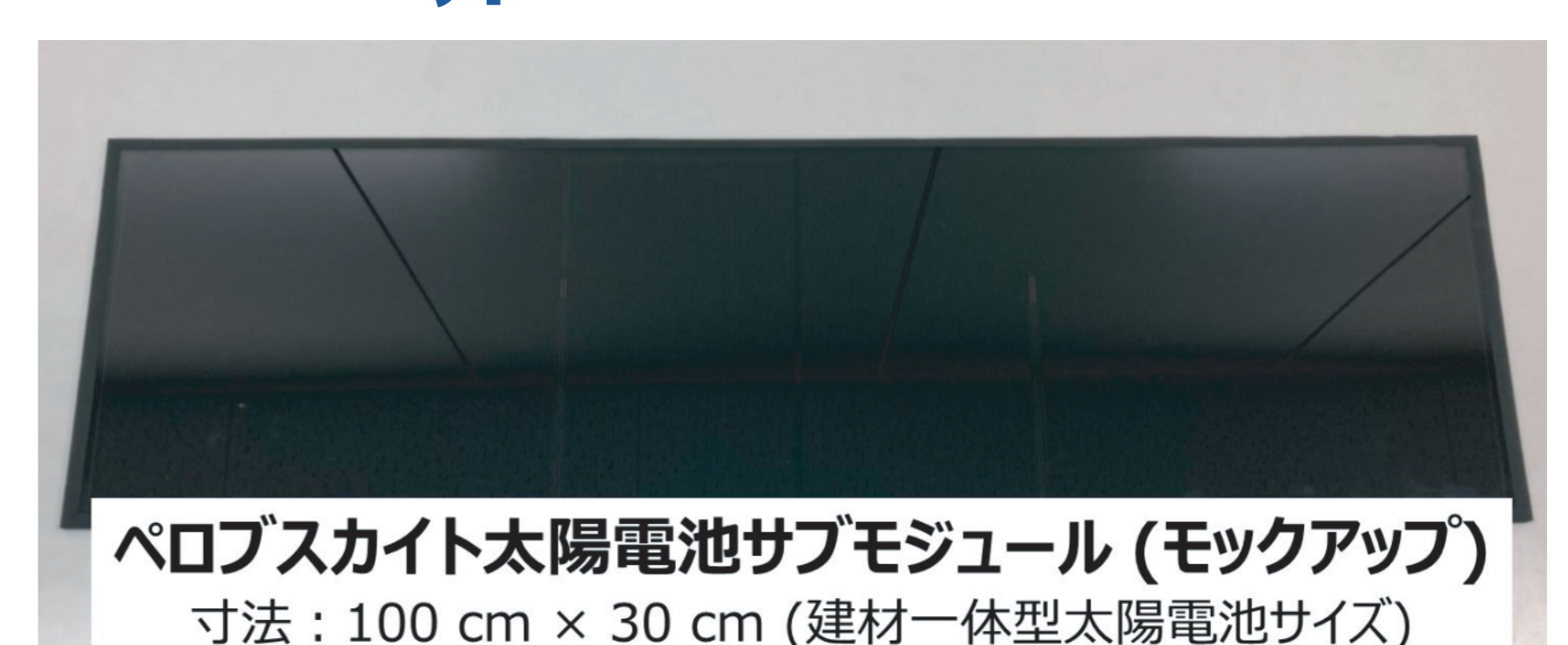


Source: Sekisui Chemical Co. Ltd.



Source: EneCoat Technologies Co. Ltd.

Glass-type



ペロブスカイト太陽電池サブモジュール (モックアップ)
寸法: 100 cm × 30 cm (建材一体型太陽電池サイズ)

Source: Kaneka Corporation